Material Safety Data Sheet

Meth-O-Gas® 100

Version: 1.2 | Revision Date: 02/15/2011 | Print Date: 01/05/2012

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: *Meth-O-Gas® 100*

Product Use Description: EPA Registered Pesticide

Chemical nature: Alkyl bromide

Company:
Chemtura Corporation
199 Benson Road
Middlebury, CT
06749
United States of America

Telephone: 866-430-2775

Emergency telephone number:
CHEMTREC: (24 hours) 800-424-9300
:
Chemtura Corporation Emergency Response: CHEMTURA : 800-292-5898

For additional emergency telephone numbers see section 16 of the Safety Data Sheet.

Prepared by:
Product Safety Department
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02/15/2011

+011-886-2-2712-5668 MSDSRequest@chemtura.com

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Danger

Form: gas Colour: colourless Odour: odourless

Hazard Summary :
Highly Toxic
May be fatal if inhaled.
Toxic
Harmful if swallowed.
May cause burns or external ulcers.
May cause:
Respiratory distress

		Lung damage Cardiac arrest May cause central nervous system effects.
OSHA Hazards	:	THIS MATERIAL IS HAZARDOUS UNDER THE CRITERIA OF THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29CFR 1910.1200.

Potential Health Effects

Primary Routes of Entry	:	Inhalation Ingestion Skin contact
Aggravated Medical Condition	:	Dermatitis Respiratory disorders
Inhalation	:	Highly Toxic May be fatal if inhaled. May cause: Respiratory distress Cardiac arrest Nervous system effects
Skin	:	May cause burns or external ulcers.
Eyes	:	May cause burns or external ulcers. Blurred vision
Ingestion	:	Toxic May be harmful if swallowed.
Chronic Exposure	:	Long term exposure may cause effects in the following: Peripheral nervous system disorders Central nervous system Respiratory system Heart Based on an epidemiology study, methyl bromide may be associated with an increase in prostate cancer risk in both private and commercial pesticide applicators. In vitro tests showed mutagenic effects
Symptoms of Overexposure	:	Symptoms may be delayed. Dizziness Blurred vision

Fatigue
Weakness
Staggering gait
Slurred speech
Nausea
Vomiting
Loss of appetite
Loss of muscle coordination
Effects of breathing high concentrations of vapour may include:
Convulsions
Lung damage
Prolonged skin and eye contact can cause burns.

Carcinogenicity:

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Component	CAS-No.	Weight percent
bromomethane	74-83-9	<= 100 %

SECTION 4. FIRST AID MEASURES

First aid procedures

Inhalation : Get medical attention immediately.
Remove to fresh air.
Keep patient warm and at rest.
Keep respiratory tract clear.
Give oxygen or artificial respiration if needed.
Gently wipe or rinse the inside of the mouth with water.

Skin contact : Get medical attention immediately.

Take off contaminated clothing and shoes immediately.
Wash off with soap and water.

Eye contact : Get medical attention immediately.
Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes.
Get medical attention.

Ingestion : Get medical attention immediately.
Never give anything by mouth to an unconscious person.

Notes to physician

Symptoms : Symptoms may be delayed.
Dizziness
Blurred vision
Fatigue
Weakness
Staggering gait
Slurred speech
Nausea
Vomiting
Loss of appetite
Loss of muscle coordination
Effects of breathing high concentrations of vapour may include:
Convulsions
Lung damage
Prolonged skin and eye contact can cause burns.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point : Remarks: none

Lower explosion limit : ca.10 %(V)

Upper explosion limit : ca.15 %(V)

Fire fighting

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Use a water spray to cool fully closed containers.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

Protective equipment and precautions for firefighters

Specific hazards during fire fighting	:	Container may explode if heated. Burning produces noxious and toxic fumes. Thermal decomposition can lead to release of irritating gases and vapours. Non-flammable in concentrated form. Methyl bromide is ignitable by a high energy spark at the flammability limits listed in Section 9.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Complete suit protecting against chemicals

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment.
Environmental precautions	:	Toxic to aquatic life. Do not allow contact with soil, surface or ground water. Do not flush into surface water or sanitary sewer system.
Methods for containment / Methods for cleaning up	:	Allow to evaporate.
Additional advice	:	Evacuate immediate area of spill or leak. Use a NIOSH/MSHA approved self-contained breathing apparatus (SCBA) or combination air-supplied/SCBA respirator for entry into affected area to correct problem. Move leaking or damaged cylinders or containers outdoors or to an isolated location, observing strict safety precautions. Work upwind if possible. Allow spill to evaporate. Do not permit entry into spill area by persons without appropriate respiratory protection until concentration of methyl bromide is determined to be less than 5 ppm. Do not contaminate water, food or feed by storage or disposal or cleaning of equipment.

SECTION 7. HANDLING AND STORAGE

Handling

Handling procedures	:	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Use personal protective equipment as required. Do not breathe vapours or spray mist. Cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging, or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured. Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

When cylinder is empty close, valve, screw safety cap onto valve outlet, and replace protection bonnet before returning to shipper. Only a registrant is authorized to refill cylinders. Do not use cylinders for any other purpose. Methyl bromide has no odor at dangerous levels and is extremely hazardous. Do not contaminate water, food or feed by storage or disposal.

Storage

Requirements for storage areas and containers : Keep container tightly closed.
Keep in a dry, cool and well-ventilated place.
Store in upright position only.
Store locked up.

Other data : Stable under recommended storage conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Components with workplace control parameters

Components / CAS-No.	Value / Basis / Update	Control parameters	Further information
bromomethane 74-83-9	TWA ACGIH 2007-01-01	1 ppm	
	C OSHA P1 2006-02-28	20 ppm 80 mg/m3	
	TWA OSHA P0 1989-01-19	5 ppm 20 mg/m3	

Engineering measures

Engineering measures : Use local ventilation to keep levels below established threshold values.
Adequate general ventilation is recommended when handling to control airborne levels.
Do not use in areas without adequate ventilation.
Use mechanical ventilation for general area control.

Personal protective equipment

Eye protection	:	Full face shield or safety glasses with brow and temple shields. Do NOT wear goggles. Face-shield
Hand protection	:	Do not use gloves.
Skin and body protection	:	Loose-fitting or well ventilated long-sleeved shirt and pants. Shoes and socks. Do NOT wear jewelry, gloves, tight clothing, rubber protective clothing, or rubber boots when handling. Complete suit protecting against chemicals
Respiratory protection	:	If the concentration of methyl bromide as measured by detector tube exceeds 5 ppm at any time, all persons must wear NIOSH/MSHA approved SCBA. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Hygiene measures	:	Pump and detector tubes for determining methyl bromide concentrations. Make sure piping is empty before doing maintenance work. All persons working with methyl bromide should be trained in the hazards, use of required respirator equipment, emergency procedures and in the proper use of methyl bromide as a fumigant where applicable.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	:	gas
Colour	:	colourless
Odour	:	odourless

Safety data

Flash point	:	Note: none
Lower explosion limit	:	ca.10 %(V)
Upper explosion limit	:	ca.15 %(V)
Boiling point/boiling range	:	38.5 °F (3.6 °C)
Vapour pressure	:	1,866.5 hPa (186,650.0 mmHg) at 68 °F (20 °C)

		3,466.4 hPa (346,640.0 mmHg) at 104 °F (40 °C)
Density	:	Note: 14.45 lb/gal
Specific Gravity	:	1.7 at 0 °C
Water solubility	:	17.5 g/l at 68 °F (20 °C)
Relative vapour density	:	ca.3.27

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Remarks: None known.
Materials to avoid	:	Remarks: Aluminium Magnesium. Zinc Alkali metals Strong bases
Hazardous decomposition products	:	Note: Hydrogen bromide Bromine Carbon dioxide (CO2) Carbon monoxide Note: Hydrogen bromide Bromine Carbon dioxide (CO2) Carbon monoxide
Hazardous reactions	:	Hazardous polymerisation does not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	LD50: 214 mg/kg Species: rat
Acute inhalation toxicity	:	LC50: Exposure time: 0.25 h Species: rat
	:	LC50: Exposure time: 8 h Species: rat

: LCLo: Exposure time: 2 h
Species: Human

Further information : Methyl bromide is a poison and can cause respiratory distress, cardiac arrest and central nervous system effects. Overexposure may cause neurotoxic effects from which recovery may be slow.

Methyl bromide demonstrates genotoxicity in several test systems at levels above the TLV.

In a two year inhalation cancer bioassay with rats at 3, 30 and 90 ppm no tumors were observed.

In a two generation inhalation reproduction study with rats at 3, 30 and 90 ppm the no observed effect level was 3 ppm. At the higher doses organ weight variation was observed in some offspring.

In a 24 month chronic dietary study in rats, a no observable effect level (NOEL) for systemic toxicity of microencapsulated methyl bromide was considered to be 50 ppm (equivalent to 2.20 mg/kg/day for males and 2.92 mg/kg/day for females). The low observable effect level (LOEL) was considered to be 250 ppm (equivalent to 11.10 mg/kg/day for males and 15.12 mg/kg/day for females) based on reduced food consumption, body weight gains and body weights noted during the first 12 to 18 months of the study. Methyl bromide was not oncogenic upon dietary administration for two years.

In a two year inhalation study in B6C3FI mice, exposed to levels of 0, 10, 33 or 100 ppm for 6 hours per day, 5 days per week, degenerative changes in the cerebellum and cerebrum, myocardial degeneration and cardiomyopathy, sternal dysplasia, and olfactory epithelial necrosis and metaplasia were observed. There was no evidence of carcinogenic activity.

In an EPA/NIH sponsored epidemiology study entitled Agricultural Health Study, pesticides were evaluated based on cancer related deaths and questionnaire results provided by farmers, nursery workers and commercial pesticide applicators in Iowa and North Carolina. Results associated methyl bromide with an increase in prostate cancer risk in pesticide applicators. Exposures to methyl bromide were not confirmed. Incidence and intensity estimations were based solely on self-reporting via a questionnaire. Although the interpretation of the data collected in the study led to a statistically significant increase in prostate cancer risk for methyl bromide applicators, the authors could not rule out the possibility that the observations may have occurred by chance alone and findings need to be confirmed.

12. ECOLOGICAL INFORMATION

Further information on ecology

Additional ecological information : These products are toxic to fish and wildlife.Keep out of lakes, streams and ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

SECTION 13. DISPOSAL CONSIDERATIONS

Further information : Pesticide wastes are toxic.
Improper disposal of excess product, spray mixture or rinsate is a violation of Federal Law.
If these wastes cannot be disposed of by use according to label instructions, contact your Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. For registered pesticides, contact your State Pesticide Agency.
Return empty cylinders freight collect to the Great Lakes Chemical Corporation location from which shipment was made. Close cylinder valve by turning clockwise until hand tight. Disconnect lines. Replace safety caps and bonnet. Return partial cylinders only after consulting Great Lakes Chemical Corporation for proper shipping instructions.

SECTION 14. TRANSPORT INFORMATION

DOT

UN number : 1062
Description of the goods : Methyl bromide
Class : 2.3
ERG Code : 123

IATA

UN number : 1062
Class : 2.3
Not permitted for transport

IMDG

UN number : 1062
Description of the goods : METHYL BROMIDE

Class	:	2.3
EmS Letter 1	:	F-C
EmS Letter 2	:	S-U
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

Massachusetts Right To Know Components : bromomethane 74-83-9
Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

Pennsylvania Right To Know Components : bromomethane 74-83-9
Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

		Methane, chloro- OSHA a. United states occupational safety and health administration substances, 29 cfr 1910.1000, sub part z. ACGIH American conference of governmental industrial hygienists threshold limit value (TLV) substances NFPA49 national fire protection association "hazardous chemicals data" substances (NFPA 49). NFPA325m national fire protection association "fire hazard properties of flammable liquids, gasses, volatile solids" substances (NFPA 325 m). Volatile Organic Substances (VOCs). Listed in EPA National Drinking Water Regulations tables 1 and 6, 40 CFR parts 141 and 142, 52 FR 25690 (7/8/87). CERCLA hazardous substances. 40 cfr part 302. May be subject to emergency release notification under SARA Title III. Toxic chemical release substances. 52 fr 21152 (6/4/87). Subject to SARA Title III.	74-87-3
New Jersey Right To Know Components	:	bromomethane Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").	74-83-9

Methane, chloro-	74-87-3

OSHA a. United states occupational safety and health administration substances, 29 cfr 1910.1000, sub part z.
ACGIH American conference of governmental industrial hygienists threshold limit value (TLV) substances
NFPA49 national fire protection association "hazardous chemicals data" substances (NFPA 49).
NFPA325m national fire protection association "fire hazard properties of flammable liquids, gasses, volatile solids" substances (NFPA 325 m).
Volatile Organic Substances (VOCs). Listed in EPA National Drinking Water Regulations tables 1 and 6, 40 CFR parts 141 and 142, 52 FR 25690 (7/8/87).
CERCLA hazardous substances. 40 cfr part 302. May be subject to emergency release notification under SARA Title III.
Toxic chemical release substances. 52 fr 21152 (6/4/87). Subject to SARA Title III.

California Prop. 65 Components : WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

bromomethane	74-83-9
Methane, chloro-	74-87-3

The components of this product are reported in the following inventories:

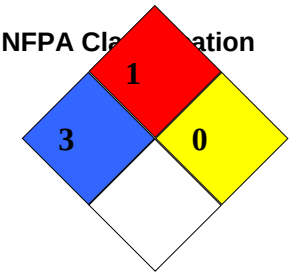
US.TSCA	On TSCA Inventory
DSL	All components of this product are on the Canadian DSL list.
AICS	On the inventory, or in compliance with the inventory
NZIoC	Not in compliance with the inventory
ENCS	On the inventory, or in compliance with the inventory
KECI	On the inventory, or in compliance with the inventory
PICCS	On the inventory, or in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory
CH INV	The formulation contains substances listed on the Swiss Inventory

SECTION 16. OTHER INFORMATION

Further information

HMIS Classification : Health hazard: 3
Chronic Health Hazard: *
Flammability: 1
Reactivity: 0
PPI:Ask supervisor or safety specialist for handling instructions

NFPA Cla ation : Health hazard: 3
Fire Hazard: 1
Reactivity Hazard: 0



Other Emergency Phone Number

Latin America:	Brazil	+52 113 711 91 44
	All other countries	+44 (0)208 762 8322
Mexico:		+52 555 004 87 63

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.